PV-WAVE®
Visual Data Analysis You Can Trust

"PV-WAVE is a very strong programming language, offering a great combination of visualization techniques, numerics, and ease of use. And PV-WAVE's inclusion of the IMSL libraries makes the software an excellent choice in terms of reliability. It significantly reduces our development time, which makes everyone more productive. The biggest thing PV-WAVE brings to the table is more efficient analysis, this is accomplished because of the software's three most significant features, in my opinion: rapid application development, flexible programming environment, and cross platform compatibility"

R. Kyle Justice
Programmer/Analyst
Cardiac Rhythm Management Laboratory
University of Alabama at Birmingham

"The list of advantages to using Ł PV-WAVE is too long to be detailed. It is flexible during data analysis, allows software transportability and is easy to learn and use."

Van Petiteville
Remote Sensing Satellite
European Space Center

The PV-WAVE Family of Products

The PV-WAVE family of products includes PV-WAVE, TS-WAVE, and JWAVE. This family of solutions provides engineers with the development tools to efficiently and accurately meet their data analysis needs.

PV-WAVE is an array based programming language used to build and deploy Visual Data Analysis applications. These applications let users manipulate and visualize simple to extremely large datasets to detect and display patterns, trends, anomalies and other vital information that would otherwise be overlooked in their data. PV-WAVE delivers powerful image and signal processing, data import and export, 3D surface, plot, histogram, contour, animation, color editor and a database table display. And, unlike other products, PV-WAVE Advantage includes a sophisticated set of analysis routines based on the industry-standard IMSL Libraries for reliable and precise numerical analysis.

TS-WAVE, for times series data analysis, is a highly extensible application that allows plot creation and batch processing of your data. The TS-WAVE framework consists of four general functional areas within a single application: time history, tabular data, x-y plotting and batch processing.

In addition, for access to visual analysis applications from anywhere at anytime, Web-based JWAVE allows users to rapidly analyze, visualize and share critical information across an organization.

PV-WAVE for Better Technical and Businesss Applications

Whether analyzing and visualizing data for technical or business purposes, users require robust applications that can uncover trends and anomalies in their data with reliability and accuracy.

Technical Applications

Scientists and engineers who use PV-WAVE have data application needs in a broad range of fields such as flight test, avionics, structural dynamics, defect analysis, process control and space systems. In order to tackle these problems, scientists and engineers are required to deal with all types of data, from simple to complex, and small to large datasets, which come from varied sources and, often in proprietary formats.

PV-WAVE delivers engineers the tools to efficiently and accurately meet their data challenges, no matter what form or complexity they come in. PV-WAVE allows users to rapidly import, manipulate, analyze and visualize data, and delivers a number of tools that provide a wide variety of solutions based on a common language. These factors maximize productivity by allowing developers to use the training and code they create for different project requirements, rather than using multiple tools that require additional training, more code maintenance, and difficult integration of applications with data.

PV-WAVE 8.0: WHAT'S NEW

Visual Numerics has expanded its visual data analysis offering with the new release of PV-WAVE 8.0. Among some of the most significant enhancements are:

- **Improved capability of all graphics routines to plot double precision data**
....
- **New interactive visualization techniques using VTK functionality that include three additional chart types**
....
- **New analysis routines**
....
- **The ability to integrate PV-WAVE into any application where XML is used as a common communication protocol**

New Features
Enhanced Visualization
- Double Precision Plotting
- Statistical Charting
- Enhanced VTK functionality

Expanded Data Capabilities
- XML support
- HDF5 support

New and Enhanced Analysis Techniques
- Optimization
- Multidimensional polynomial processing

Enhanced Performance and Language
- OpenMP
- Array Processing
- User interface convenience

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Business Applications

In addition to the traditional technical needs for development tools such as PV-WAVE, in recent years, there has been a growing need for robust analytics and visualization in business. Most business applications provide only the most basic data visualization capabilities, leaving business analysts and decision-makers with inferior tools to uncover opportunities, market trends and competitive threats.

In today's complex, constantly changing business environment, activity occurs across multiple dimensions simultaneously. One- or two-dimensional representations cannot adequately represent what is truly going on in your company or market space. You need to see your complete environment.

Multi-dimensional plots, interactive displays, sophisticated and accurate forecasting tools and animations give you the power to drill down into any business situation and uncover the trends and patterns that will give you a competitive edge. A spreadsheet or pie chart is not enough; you need images that bring the data to life; that enable you to see what is happening at a glance; and that inspire innovative thinking and incisive action.

PV-WAVE is a one-stop solution for any developer with visual data analysis needs. It can handle any size dataset of any complexity and offers a flexible programming environment with powerful analysis tools for fast development and reliable results.

Application Areas

PV-WAVE includes powerful data visualization, advanced analysis and development tools that can dramatically decrease your time to insight, enabling you to seize opportunities, preempt your competitors, streamline your supply chain, enhance customer loyalty and increase your profitability.

Our clients use PV-WAVE for a broad range of analysis techniques including:

- Test Engineering
- Flight Test Engineering
- Medical Imaging
- Satellite Ground Stations
- Meteorological

- Time Series Analysis
- Profitability Analysis
- Variance
- Predictive Modeling
- Correlation Analysis

- Budget Forecasting
- Trend Analysis
- Regression Analysis
- Cluster Analysis

A Team of Professionals Ready to Help

Our expertise in combining numerics, graphics and visualization techniques for visual data analysis solutions is unsurpassed in the industry. With over 30 years of experience across a wide range of industries such as aerospace, government, automotive, finance, and more, companies can count on Visual Numerics to deliver timely, trusted and reliable solutions for their analysis and visualization needs.

Our consultants can help architect and develop the best solution for you, using the tools and languages that provide the optimal solution. With expertise from desktop computing to distributed deployment, and a combination of specialized applications for test engineering, process control, time series analysis, financial modeling and more, Visual Numerics' consultants have the tools and know-how to solve problems at any level of complexity.